WHAT IS CLAIMED IS:

1. A collateral ventilation bypass trap system comprising:

a containment vessel for collecting discharge from one or more lungs of a patient;

at least one conduit having a first end connected to the containment vessel and a second end passing through the thoracic wall and lung of a patient at a predetermined site, thereby establishing fluid communication between the containment vessel and the inner volume of the lung; and

a sealing device for establishing a fluid tight seal between the at least one conduit and the thoracic wall and between the at least one conduit and the lung.

2. A collateral ventilation bypass trap system comprising:

a containment vessel for collecting discharge from one or more lungs of a patient;

a filter/one-way valve connected to the containment vessel;

at least one conduit having a first end connected to the containment vessel through the filter one-way valve and a second end passing through the thoracic wall and lung of a patient at a predetermined site, thereby establishing fluid communication between the containment vessel and the inner volume of the lung; and

a sealing device for establishing a fluid tight seal between the at least one conduit and the thoracic wall and between the at least one conduit and the lung.

3. A method for increasing the expiratory flow from a diseased lung, the method comprising:

creating an anastomotic opening extending from the thoracic wall and into the inner volume of the lung at a site determined to have a high degree of collateral ventilation;

establishing a fluid communication link between the inner volume of the lung at the site determined to have a high degree of collateral ventilation and a containment vessel through a conduit extending from the containment vessel to the lung through the anastomotic opening such that air in the lung flows into the containment vessel; and

establishing a fluid tight seal between the anastomotic opening and the conduit.